REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
C	Retyped Sh 2 with changes ECR742-2	12/8/66	KC.
D	ECR 742-3 CHANGE SH 2 E.T.	12-12-66	K.C.

ROOT MEAN SQUARER - WIDE BAND

GENERAL DESCRIPTION:

Series 743 provides an output of $+\sqrt{|X^2+Y^2|}$ for both positive and negative value of X and Y with 3 db bandwidths in excess of 30,000 HZ.
Series 742 output is $+\sqrt{|X^2|}$ for both + and - values of X.
Series 744 and 745 are reduced cost versions. RMS'ers are also available in -1 versions which give 2 quadrant input operation with an external amplifier or one quadrant (negative) without.

Applications are in RMS generation, true rms wide band meters with linear scale and rectangular to polar generation. The output retains the instaneous variations of the inputs. An external low-pass filter can be used to filter all components except the D.C. component.

RATINGS:
At 25°C and applicable to all models unless otherwise specified.

CONFORMITY:
0.5% or 20MV whichever is greater.

INPUTS:
For X or Y, -10 to +10V into 5K ohms minimum, each.

TRANSFER FUNCTION:

Series 743 and 745: $Vo = + \sqrt{|(X^2+Y^2)|}$

742 and 744: $Vo = + \sqrt{|X^2|}$

SCALE FACTOR UNIT TO UNIT:
±2% of unity

OUTPUT:
0 to +10 volts into 10K ohms minimum from 50 ohms max output impedance.

3 DB BANDWIDTH:
30,000 HZ min

SHORT CIRCUIT DURATION ON OUTPUT:
3 SEC max.

ABSOLUTE MAX VOLTAGE:
18 volts input any terminal.

SUPPLY VOLTAGE:
3 wire 15V DC.

DIMENSIONAL TOLERANCES UNLESS OTHERWISE SPECIFIED			DRAWN	DATE	TITLE	TRANS MAGNETICS
2 PL. DEC.	3 PL. DEC.	ANG.	GG	8/66	Root Mean Squarers Series 742 thru 745	134-08 36TH ROAD / FLUSHING 54. NEW YORK
±	±	±	CHECKED	DATE		
			APPROVED MS	DATE	SCALE	SIZE A
					CODE: 17755	742A001 SHEET 1 OF 3 D

OGILVIE PRESS, INC., BROOKLYN 17, N. Y. ULTRAVEL NO. 490M 27147

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL

SUPPLY CURRENT:
50 MA

SENSITIVITY OF OUTPUT TO SUPPLY VOLTAGE:
1% ±5 MV/ % line change

OVER OPERATING TEMPERATURE:

OUTPUT STABILITY:	742 and 743	744 and 745
	(±200 ppm ±0.5MV)/°C	(±300 ppm ± 1MV)°C

OPERATING TEMPERATURE:
Add Suffix to series No.
M -55 to +85°C
C 0 to 70°C

CASE SIZE:
Add suffix to temperature suffix.
(C) P5: .750 x 3.187 x 3.437
P8: .580 Max. Hx 3" sq.
(D) P6: 1.531 MAX. x 3.187 MAX. x 3.437 MAX.

MODELS 742-1, 743-1 744-1 and 745-1 are RMS'ers for negative inputs only. With an external amplifier they can furnish 2 quadrant or positive input RMS'ers. See connection diagram.

PRICE LIST (1-9 quantity) August 1, 1966

742CP5	(C)	742-1 CP5
CP8		CP8
MP8		MP8
744MP8		744-1 MP8
(D) 743CP6		743-1 CP5
CP8		CP8
MP8		MP8
745MP8		745-1 MP8

DIMENSIONAL TOLERANCES UNLESS OTHERWISE SPECIFIED			DRAWN	DATE	TITLE	TRANS MAGNETICS
2 PL. DEC.	3 PL. DEC.	ANG.	GG	8/66	Root Mean Squarers Series 742 thru 745	134-08 36TH ROAD / FLUSHING 54. NEW YORK
±	±	±	CHECKED	DATE		
			APPROVED MS	DATE	SCALE	SIZE A
					CODE: 17755	742A001 D
						SHEET 2 OF 3

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
C	Retyped Sh 2 with changes ECR742-2	12/8/66	KC.
D	ECR 742-3 CHANGE SH 2 E.T.	12-12-66	K.C.

ROOT MEAN SQUARER - WIDE BAND

GENERAL DESCRIPTION:

Series 743 provides an output of $+\sqrt{|X^2+Y^2|}$ for both positive and negative value of X and Y with 3 db bandwidths in excess of 30,000 HZ.
Series 742 output is $+\sqrt{|X^2|}$ for both + and - values of X.
Series 744 and 745 are reduced cost versions. RMS'ers are also available in -1 versions which give 2 quadrant input operation with an external amplifier or one quadrant (negative) without.

Applications are in RMS generation, true rms wide band meters with linear scale and rectangular to polar generation. The output retains the instaneous variations of the inputs. An external low-pass filter can be used to filter all components except the D.C. component.

RATINGS:
At 25°C and applicable to all models unless otherwise specified.

CONFORMITY:
0.5% or 20MV whichever is greater.

INPUTS:
For X or Y, -10 to +10V into 5K ohms minimum, each.

TRANSFER FUNCTION:
Series 743 and 745: $Vo = + \sqrt{|(X^2+Y^2)|}$
742 and 744: $Vo = + \sqrt{|X^2|}$

SCALE FACTOR UNIT TO UNIT:
±2% of unity

OUTPUT:
0 to +10 volts into 10K ohms minimum from 50 ohms max output impedance.

3 DB BANDWIDTH:
30,000 HZ min

SHORT CIRCUIT DURATION ON OUTPUT:
3 SEC max.

ABSOLUTE MAX VOLTAGE:
18 volts input any terminal.

SUPPLY VOLTAGE:
3 wire 15V DC.

DIMENSIONAL TOLERANCES UNLESS OTHERWISE SPECIFIED			DRAWN	DATE	TITLE	TRANS MAGNETICS
2 PL. DEC.	3 PL. DEC.	ANG.	GG	8/66	Root Mean Squarers Series 742 thru 745	134-08 36TH ROAD / FLUSHING 54. NEW YORK
±	±	±	CHECKED	DATE		
			APPROVED MS	DATE	SCALE	SIZE A
					CODE: 17755	742A001 D
						SHEET 1 OF 3

OGILVIE PRESS, INC., BROOKLYN 17, N. Y. ULTRAVEL NO. 490N 27147

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL

SUPPLY CURRENT:
50 MA

SENSITIVITY OF OUTPUT TO SUPPLY VOLTAGE:
1% ±5 MV/ % line change

OVER OPERATING TEMPERATURE:

OUTPUT STABILITY:	742 and 743	744 and 745
	(±200 ppm ±0.5MV)/°C	(±300 ppm ± 1MV)°C

OPERATING TEMPERATURE:
Add Suffix to series No.
M -55 to +85°C
C 0 to 70°C

CASE SIZE:
Add suffix to temperature suffix.
(C) P5: .750 x 3.187 x 3.437
P8: .580 Max. Hx 3" sq.
(D) P6: 1.531 MAX. x 3.187 MAX. x 3.437 MAX.
MODELS 742-1, 743-1 744-1 and 745-1 are RMS'ers for negative inputs only. With an external amplifier they can furnish 2 quadrant or positive input RMS'ers. See connection diagram.

PRICE LIST (1-9 quantity) August 1, 1966

742CP5	(C)	742-1 CP5
CP8		CP8
MP8		MP8
744MP8		744-1 MP8
(D) 743CP6		743-1 CP5
CP8		CP8
MP8		MP8
745MP8		745-1 MP8

DIMENSIONAL TOLERANCES UNLESS OTHERWISE SPECIFIED			DRAWN	DATE	TITLE	TRANS MAGNETICS
2 PL. DEC.	3 PL. DEC.	ANG.	GG	8/66	Root Mean Squarers Series 742 thru 745	134-08 36TH ROAD / FLUSHING 54, NEW YORK
±	±	±	CHECKED	DATE		
			APPROVED MS	DATE	SCALE	SIZE A
					CODE: 17755	742A001 D
						SHEET 2 OF 3

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	ECR 749-1 Sheet # 2 ET	11-66	R.C

Right Triangle Solvers - Wideband

General Description:
Series 749 and 750 provide an output of $\pm\sqrt{X^2 - Y^2}$ with bandwith from DC to 30,000 HZ (3DB).
Applications are in right triangle solutions where the hypotenuse and one side are given and the third side is required. A typical example in radar:
Given: Slant range and altitude.
Solve For: ground range. For hypotenuse solvers, see Root Mean Squarers Series 743.
Series 750 is an economy model.

Ratings:
At 25°C unless otherwise specified.

Conformity:
0.5% or 20MV whichever is greater.

Inputs:
X and Y each 0 to plus 10 volts DC into 10K minimum resistance

Transfer Function:
$Vo = +\sqrt{X^2 - Y^2}$
For values of X greater than Y. For Y greater than X output is nominally zero.

Scale Factor:
Unit to Unit: ±2% of unity.

Output:
0 to 10V from 50 ohms max output impedance into 10K ohms minimum without loss of conformity.

3DB Bandwidth:
30,000 HZ min.

Short Circuit Duration on Output:
3 secs. max.

Absolute Max Voltage:
18V input any terminal

DIMENSIONAL TOLERANCES UNLESS OTHERWISE SPECIFIED			DRAWN	DATE	TITLE Triangle Solvers $Vo=\sqrt{X^2 - Y^2}$ Series 749, 750	TRANS MAGNETICS 134-06 36TH ROAD / FLUSHING 54. NEW YORK	
2 PL. DEC.	3 PL. DEC.	ANG.	GG	10/66			
±	±	±	CHECKED	DATE			
			APPROVED NS	DATE	SCALE	SIZE A	749A001
					CODE: 17755		SHEET 1 OF 2

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL

Supply Voltage:
3 wire plus and minus 15V DC at 35MA max

Sensitivity of Output to Supply Voltage:
1% ± 5MV / % line change

Output Stability Over Operating Temperature:

Series	749	750
	(± 200 ppm ± 0.5 MV)/°C	(± 300 ppm ± 1 MV)/°C

Operating Temperature:
Add suffix to Series No.
M -55 to + 85°C
C 0 to 70°C

Case Size:
Add suffix to temperature suffix.
P8: .531 max X 3' square
P6: 1.531 max high X 3.18 X 3.43
All models with p.c. wire leads on base

Models Available:
749 CP 8
749 CP 6
749 MP 8 (A)
750 MP 8

NOTE:
Specifications and prices are subject to change without notice, are based upon Transmagnetics Inc. Test Procedures, and should be confirmed when ordering.
Outline and connection drawings available on request.

DIMENSIONAL TOLERANCES UNLESS OTHERWISE SPECIFIED			DRAWN	DATE	TITLE Triangle Solvers $Vo = \sqrt{X^2 - Y^2}$ Series 749, 750	TRANS MAGNETICS 134-08 36TH ROAD / FLUSHING 54. NEW YORK	
2 PL. DEC.	3 PL. DEC.	ANG.	GG	10/66			
±	±	±	CHECKED	DATE			
			APPROVED	DATE	SCALE	SIZE A	749A001 A
					CODE: 17755		SHEET 2 OF 2

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